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North Pole Refining

Division of Earth Resources Company of Alaska

No Date

Since Earth Resources Company of Alaska was formed in 1969, we have been asked many questions by people interested in our refinery located in the Interior at North Pole, near Fairbanks. To present the facts about the project, here are the answers to questions frequently asked.

Q: What products do you make?

A: North Pole Refining produces military and commercial grade jet fuel, home heating fuel, automotive diesel fuel and fuel for power generation.

Q: Do you export from Alaska?

A: North Pole Refining management, supported by ERCA, is committed to providing for the petroleum requirements of Interior Alaska. Products in excess of the local market will be disposed of in Anchorage or in the most economically advantageous area.

Q: What kind of refining processes are used?

A: Currently, distillation only. This means heating the crude oil and separating it into components according to boiling range. To make gasolines we would have to add a reforming process to improve the octane of the raw naphtha.

Q: How big is the refinery?

A: Quite small by today's standards, but large enough to serve the needs of the Interior. We market less than 13,000 B/D (barrels per day), although we feed 32,000 B/D to the process units. The other 19,000 B/D which cannot be made into a saleable product without using very complex and expensive equipment is returned to the Trans Alaska Pipeline. An expansion underway will increase the refinery's process capacity to 44,000 B/D by November 1980.

Q: What is the trade-off in air quality?

A: NPR has devoted a great deal of effort and capital to minimize the effect on air quality. To answer this question, it is important to understand clearly the magnitude and type of air emissions from the refinery. With regard to type, our emissions are no different from those from existing sources in the Fairbanks area; nothing new has been introduced. The magnitude of the emissions can be most effectively shown by comparing refinery emissions with those from existing sources in the Fairbanks area. Following is a table of suphur dioxide and water emissions at peak load from the University of Alaska Heating Plant, Fort Wainwright Power Plant and Fairbanks Municipal Utilities System, all compared to NPR at 1.

	NPR Top. Plant	U of A Heat Plant	Ft. Wainwright Power Plant	F.M.U.S. Power Plant
Heat Release	1	0.9	1.6	2.1
Sulphur Dioxide	1	0.7	1.4	1.8
Water Emissions	1	1.0	1.9	2.5

The comparison shows the refinery emissions to be appreciably smaller than those from either Ft. Wainwright and F.M.U.S. and not much larger than the University of Alaska. Based on 10 years of wind data taken at Eielson Air Force Base and Fairbanks airport, the estimated maximum ground level concentration of sulphur dioxide due to the refinery at any distance and in any direction is less than 2.5% of the level considered safe by Federal and State agencies. A conservative estimate of the maximum ground level concentration of carbon monoxide is only 0.001% of Federal and State regulations.

Q: How much will these numbers increase if you start making gasoline?

A: At the most, 10-15%

Q: How do you market your products?

A: Through existing channels of distribution in the area. NPR does not plan to enter the home heating retail business.

Q: What is the cost of products?

A: NPR prices are **below** those of every area of the U.S., including Anchorage.

Q: What about further expansion and the controls on growth?

A: Any additional expansion is strictly speculative and is several years away. In any case, Federal and State law requires that permits be granted before emissions from an existing source can be increased. Furthermore, operating permits granted by the state must be reviewed and approved every five years. These procedures are designed to protect the environment and to confine growth to a selected limit for the area involved.

Q: Does the Refinery cause ice fog?

A: Not at ground level. We use air for cooling rather than water so we have no open ponds, except to collect storm water. The water formed in burning refinery fuel will be released 200 feet in the air. The warm dry air rising from the air coolers will tend to prevent ice fog. Further, the refinery location was chosen in relation to prevailing air currents in order to minimize ground-level fog.

Q: What about water quality?

A: The refinery has been designed to minimize water usage. We use, at most, 37 gpm (gallons per minute). By comparison, the minimum flow in the Tanana is 38,000 times greater than that. Water is pumped from wells and can be returned to the river after biological treating and inspection.

Water quality after treating is well within State regulations.

Q: How do you control leaks and spills?

A: Stringent inspections and operating procedures minimize such occurrences. Equipment can be tested non-destructively while in operation, and by keeping records of the condition one can predict when repairs are necessary, well in advance of failure.

Spills in the storage tank area are contained by impervious dikes around each tank.

The refinery is shut down briefly each summer for thorough inspection, cleaning and repairs.

Q: What about fires?

A: The refinery has its own 24-hour fire crew and is equipped with a fire protection system and equipment. These facilities are required by law and by our insurance underwriters.

Q: How will products be supplied when the refinery is not operating?

A: The inventory of petroleum products in the Interior has been quadrupled, so supply will be far more reliable. The refinery carries an ample inventory of spare equipment to avoid delays in repairs.

Q: Why North Pole?

A: We looked at several sites before selecting North Pole. First of all the refinery had to be located relatively close to the large Fairbanks area consumer market, existing transportation systems and public utilities in order to better serve the market at lower cost. Second, it had to be close to a river. Third, meteorological studies dictated we locate southeast of Fairbanks to minimize detrimental environmental effects.

Q: Who performed the refinery construction?

A: All the work done at North Pole was performed by local Alaskan contractors under subcontract to a large general contractor in the refinery design and construction business. The general contractor stationed a staff of six or seven people at North Pole over the two-year construction period. There was an average work force of 50 men with the peak at around 200. This manpower was supplied by local contractors.

Q: How many people are required to operate the refinery?

A: Total employees number about 60.

Q: How many are Alaskans?

A: We have brought in about four outside families, who are becoming permanent Alaskans. We have hired the rest of our employees in Alaska. We provide a paid three to four-month training program for operating personnel.

Q: Who is ERCA?

A: ERCA is an Alaskan subsidiary of Dallas-based Earth Resources Company, an independent, publicly owned, diversified mining and refining company. ERCA was incorporated in Alaska in 1969 to build and operate a refinery integrated with a power plant. To our knowledge it is the first of its kind. The company's affairs are guided by a seven-person Board of Directors of which the majority, six, are Alaskans. In October of 1973, ERCA acquired the business of Rogers & Babler, Inc. Since 1949, Rogers and Babler has been actively engaged in road building and paving and the manufacture and sale of commercial aggregates and hot-mix asphalt in the Anchorage area. ERCA's New Ventures Division is exploring opportunities for investment in several renewable and non-renewable Alaskan resources.

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